ABSTRACT OF THE DISCLOSURE

An improved catheter is provided that is particularly useful for simultaneously mapping electrical activity at multiple locations within the heart. The catheter comprises an elongated catheter body having proximal and distal ends and at least one lumen extending longitudinally therethrough. A control handle is attached to the proximal end of the catheter body. A mapping assembly is mounted to the distal end of the catheter body. The mapping assembly comprises at least two elongated flexible spines, each spine having a proximal end attached to the distal end of the catheter body and a free distal end. Each spine carries at least one electrode along its length. The catheter further comprises at least two spine puller wires, each spine puller wire corresponding to one of the at least two spines. Each spine puller wire has a proximal end anchored in the handle and a distal end anchored at or near the distal end of its corresponding spine such that, in use, longitudinal movement of a spine puller wire relative to the catheter body results in deflection of the spine in which the spine puller wire is anchored. The use of a plurality of spines permits simultaneous mapping of multiple points, increasing the speed of mapping of regions of interest.

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